

WHAT IS CLAIMED IS:

1. An electrophoretic display which comprises a plurality of display cells wherein an electrophoretic fluid is filled and sealed between a polymeric sealing layer and a first conductive layer coated on the surface of the display cells.
- 5 2. An electrophoretic display which comprises an array of microcups on a first non-conducting substrate wherein said microcups have a surface coated with a first conductive layer and are filled with an electrophoretic fluid and the filled microcups are sealed with a polymeric sealing layer formed from a sealing composition having a specific gravity lower than that of the electrophoretic fluid.
- 10 3. The electrophoretic display of Claim 2 wherein said array of filled and sealed microcups is laminated with a second conductive layer.
4. The electrophoretic display of Claim 3 wherein said second conductor layer is laminated with a second non-conducting substrate.
5. The electrophoretic display of Claim 3 further comprising a third conductive layer
15 between the first non-conducting substrate and the array of filled and sealed microcups.
6. The electrophoretic display of Claim 2 wherein said first conductive layer is patterned.
7. The electrophoretic display of Claim 3 wherein said second conductive layer is patterned.
- 20 8. The electrophoretic display of Claim 5 wherein said third conductive layer is patterned.
9. The electrophoretic display of Claim 5 wherein said first conductive layer is of a discrete pattern.
10. The electrophoretic display of Claim 2 wherein said first conductive layer is
25 formed by thin film deposition.
11. The electrophoretic display of Claim 10 wherein said thin film deposition is accomplished by sputtering or vapor deposition.
12. The electrophoretic display of Claim 3 wherein said second conductive layer is formed by thin film deposition or lamination.
- 30 13. The electrophoretic display of Claim 5 wherein said third conductive layer is formed by thin film deposition or lamination.

14. The electrophoretic display of Claim 2 wherein said sealing composition is a radiation, heat or moisture curable composition.

15. The electrophoretic display of Claim 2 wherein said sealing composition comprises a thermoplastic or thermoset precursor.

5 16. The electrophoretic display of Claim 15 wherein said thermoplastic or thermoset precursor is selected from the group consisting of hydrocarbon rubbers, butadiene rubbers, isoprene rubbers, thermoplastic elastomers, polyvalent acrylates, polyvalent methacrylates, cyanoacrylates, polyvalent vinyls, polyvalent epoxides, polyvalent isocyanates, polyvalent allyls and oligomers and polymers containing crosslinkable functional groups.

10 17. A process for the manufacture of an electrophoretic display, which process comprises:

a) forming microcups on a first non-conducting substrate wherein said microcups have side surface and bottom surface and are separated by partition walls having top surface;

15 b) forming a first conductive layer on the side surface and the bottom surface of the microcups and the top surface of the partition walls;

c) filling the microcups with an electrophoretic fluid;

d) sealing the filled microcups;

e) forming a second conductive layer over the filled and sealed microcups; and optionally

20 f) removing the first conductive layer on the top surface of the partition walls.

18. The process of Claim 17 wherein said microcups are formed by microembossing a thermoplastic or thermoset precursor with a male mold, imagewise exposing a radiation curable material or applying a spacer film having prepunched holes.

25 19. The process of Claim 17 wherein said first conductive layer is formed by thin film deposition.

20. The process of Claim 19 wherein said thin film deposition is sputtering or vapor deposition.

21. The process of Claim 17 wherein the sealing is accomplished by a sealing composition having a specific gravity lower than that of the electrophoretic fluid.

30 22. The process of Claim 21 wherein said filling and sealing are accomplished by filling a mixture of the electrophoretic fluid and the sealing composition and hardening the

sealing composition during or after it phase separates and forms a supernatant layer above the electrophoretic fluid.

23. The process of Claim 21 wherein said sealing is accomplished by overcoating the sealing composition on the electrophoretic fluid and hardening the sealing composition.

5 24. The process of Claim 21 wherein said sealing composition is a radiation, heat or moisture curable composition.

25. The process of Claim 21 wherein said sealing composition comprises a thermoplastic or thermoset precursor.

10 26. The process of Claim 25 wherein said thermoplastic or thermoset precursor is selected from the group consisting of hydrocarbon rubbers, butadiene rubbers, isoprene rubbers, thermoplastic elastomers, polyvalent acrylates, polyvalent methacrylates, cyanoacrylates, polyvalent vinyls, polyvalent epoxides, polyvalent isocyanates, polyvalent allyls and oligomers and polymers containing crosslinkable functional groups.

15 27. The process of Claim 17 wherein said second conductive layer is formed by thin film deposition or lamination.

28. The process of Claim 17 further laminating a second non-conducting substrate over the second conductive layer.

29. The process of Claim 17 further comprising forming a third conductive layer between the first non-conducting substrate and the microcups.

20 30. The process of Claim 29 wherein said third conductive layer is formed by thin film deposition or lamination on the first non-conducting substrate.